

rotation-reciprocation conversion section for converting rotational movement of the reciprocation-rotation conversion section into reciprocating movement; and

reaction-force receiving section for supporting reaction force of reciprocating movement of the rotation-reciprocation conversion section,

wherein the reciprocation-rotation converter section comprises a first screw member to which axial thrust is imparted by the reciprocation movement section, a second screw member to be screw-engaged with the first screw member, and a first detent section for locking the first screw member to restrict movement to only an axial direction;

the rotation-reciprocation conversion section comprises a screw section provided on the second screw member in a position different from the location of a screw section to be screw-engaged with the first screw member, a third screw member to be screw-engaged with the screw section, and a second detent section for locking the third screw member to restrict movement to only an axial direction; and

the reaction-force receiving section comprises a substrate, the second screw member, and a first shaft bearing for supporting the second screw member on the substrate to allow rotation and to prohibit axial movement.

6. (Twice Amended) The thrust converter according to claim 2, wherein the reciprocation movement section comprises a motor, a fourth screw member provided on a load-side extremity of a shaft of the motor, a fifth screw member to be screw-engaged with the fourth

screw member, a third detent section for locking the fifth screw member to restrict movement to only an axial direction, and motor rotation-reciprocation conversion section for converting the rotating movement of the shaft of the motor into reciprocating movement;

the reciprocation-rotation conversion section comprises a first screw member supported by the fifth screw member to allow rotation and to prohibit axial movement by way of a second shaft bearing, a second screw member to be screw-engaged with the first screw member, and a first detent section for locking the first screw member to restrict movement to only the axial direction;

the rotation-reciprocation conversion section comprises a screw section provided on the second screw member in a position different from the location of a screw section to be screw-engaged with the first screw member, a third screw member to be screw-engaged with the screw section, and a second detent section for locking the third screw member to restrict movement to only an axial direction; and

the reaction-force receiving section comprises a substrate, the second screw member, and a first shaft bearing for supporting the second screw member on the substrate to allow rotation and to prohibit axial movement.

13. (Twice Amended) A method of controlling a thrust converter comprising a reciprocation movement section which comprises a motor, and a motor rotation-reciprocation conversion section for converting rotating movement of a shaft of the motor into reciprocating

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movement, wherein a motor whose torque can be controlled through current control is used as the motor, and constant thrust is produced by constant control of the current to the motor, the method comprising:

converting reciprocating movement of a reciprocation movement section into rotational movement;

converting rotational movement of a reciprocation-rotation conversion section into reciprocating movement; and

supporting reaction force of reciprocating movement of the rotation-reciprocation conversion section.

17. (Twice Amended) A controller for controlling the thrust converter defined in claim 6, comprising:

an input section for entering a moving status of an external drive source other than a drive source of the thrust converter;

computation section for computing the amount of correction used for correcting the position or torque of a motor of the thrust converter on the basis of the moving status entered by way of the input section; and

correction section for correcting the position or torque of the motor of the thrust converter on the basis of the computed amount of correction.

18. (Twice Amended) A controller for controlling the thrust converter as defined in claim 6, comprising:

an input section for entering the temperature of a machine having provided thereon the thrust converter;

section for computing the amount of correction required for correcting the position of a motor of the thrust converter or reading the amount of correction from memory; and

correction section for correcting the position of the motor of the thrust converter in accordance with the amount of correction.

19. (Twice Amended) A controller for controlling the thrust converter as defined in claim 6, comprising:

a manual instruction device for inputting a positional instruction to a motor whose torque and position can be controlled;

control section for controlling the position and torque of the motor; and

changeover section for which operates the motor through position control on the basis of a difference when a difference between the positional instruction and the current position is lower than a predetermined value and changes the motor to torque control when the difference between the positional instruction and the current position exceeds the predetermined value.

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21. (Twice Amended) A controller for controlling the thrust converter as defined in claim 6, comprising:

an input section for entering a correction value to be used for correcting a mechanical positional error of the thrust converter;

storage section for storing the correction value entered by way of the input section; and

correction section for correcting the mechanical positional error of the thrust converter on the basis of the correction value stored in the storage section.